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# Mangrove red snapper nursery and grow-out

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# Is **SNAPPER** farming profitable?

## Technical information of snapper grow-out culture in ponds using formulated diet

Project duration (years)	5
Area (ha)	0.422
Stocking density (per ha)	5,000
Culture period (mo)	6
Croppings per year	2
Total stocks per crop	2,110
Survival rate (%)	100
Feed conversion ratio	2.5
Average weight at harvest (g)	425
Production per crop (kg)	896.75
Total feeds per crop (kg)	2,242
Cost of feed/kg (PhP)	55
Cost of juveniles/piece (4" per piece, PhP 5/in)	20
Average farm gate price (PhP/kg)	250

## Costs-and-returns

Total variable cost per year (PhP)	341,150
Total fixed cost per year (PhP)	29,407
Net income per year (PhP)	77,818
Internal rate of return (%)	221
Return-on-investment (%)	203
Payback period (years)	0.46

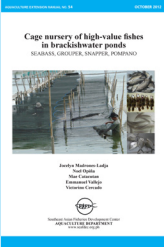
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**AEM 53 Grow-out culture of mangrove red snapper (*Lutjanus argentimaculatus* Forsskal, 1775) in ponds**  
**Eliseo Coniza, Mae Catacutan, Pedrita Caballero (2012)**  
**30 pp**

This extension manual tells of the procedures in farming mangrove red snapper and its costs-and-returns.



**AEM 54 Cage nursery of high-value fishes in brackishwater ponds ( sea bass, grouper, snapper, pompano)** **Jocelyn Madrones-Ladja et al (2012) 24 pp**  
This extension manual describes nursery pond requirements, nursery rearing procedures, common diseases of young marine fish, and economic analysis of cage nursery as an enterprise separate from hatchery and grow-out culture.

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# MANGROVE RED SNAPPER

## Nursery and Grow-out



**Southeast Asian Fisheries Development Center**  
**AQUACULTURE DEPARTMENT**  
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## Why **SNAPPER**?

Mangrove red snapper (locally known as *maya-maya*, *mangagat*, *managat*, and *gingaw*) is a high-value marine fish with great potential for export to Japan, Singapore, Hong Kong, China, Taiwan, and the USA. It is a fast growing fish which can be reared easily in captivity and can survive well in all phases of culture, from hatchery to grow-out.



## How to culture **SNAPPER**?

### Nursery in netcages

- Stock 2.5 cm fingerlings at a density of 150-200 fingerlings/m<sup>3</sup>.
- Provide black net ribbons over the cage and set PVC cuttings one over the other at the bottom of the cage as shelter of the fish.



Net cages in a nursery pond



PVC cuttings as fish shelter

- Cover each cage with old or used nets, coconut fronds or nipa shingles to protect the stock from direct sunlight and predator birds.
- Feed fish with formulated diets at 12% of average body weight (ABW) per day, gradually decreasing to 4% of ABW. Spread out feeding to 4-5 times per day to make feed always available to fish and reduce cannibalism.
- Harvest snapper juveniles when they reach the weight of 40-50 g.

### Grow-out in ponds

- Drain and level the pond, making the pond bottom slope gradually towards the gate. Soil-seal the pond gate by filling mud between rows of slabs. Repair and install gate screens and slabs. Eradicate unwanted species using a mixture of hydrated lime plus ammonium sulfate at 5:1 ratio, and apply on days with intense sunlight. Dry the pond for about 2-3 weeks until the soil cracks. Apply hydrated lime at 0.5-1 ton/ha. Install bamboo catwalks. Let brackishwater flow into the pond during high tide.



Application of lime in a pond



Acclimation of snapper juveniles in a pond

- Stock 5,000 pieces of snapper juveniles in a one-hectare pond.
- Change 50-60% of the pond water 4-6 times every high tide. During low tide, it may be necessary to pump water to maintain a water depth of 1 m.
- Give daily feed ration at 8 a.m, 12 noon, and 4 p.m. with 30%, 30%, and 40% allocation, respectively.
- Harvest snapper after six months or when the fish attain the preferred marketable size of  $\geq 400$  g.

## Is **SNAPPER** nursery production profitable?

### Technical assumption for a cage-nursery production using formulated diets

Project duration (years)	5
Total pond area for stocking (m <sup>2</sup> )	4,000
Number of cages (2x3x1.3 m <sup>3</sup> )	8
Number of crops/year	3
Stocking density (pcs/m <sup>3</sup> )	150
Total number of stock per crop	7,200
Days of culture	90
Feed conversion ratio	1.8
Survival rate	90%
Total recovery at harvest per crop (pcs)	6,480
ABL at harvest (cm)	10
Selling price per cm body length (PhP)	2
Farm gate selling price (PhP/pc)	20
Gross value of harvest per crop (PhP)	129,600

### Costs-and-returns

Total variable cost per year (PhP)	195,126
Total fixed cost per year (PhP)	91,092
Net income per year (PhP)	102,582
Internal rate of return (%)	317
Return-on-investment (%)	281
Payback period (years)	0.31



Feeding of snappers stocked in a pond



Harvest of snapper